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Smart Sponge®

- Chemically selective to hydrocarbons
- Removes sheen
- Repels water
- Transforms pollutant into stable solid
- 1 pound absorbs 1 gallon oi
- Fully recyclable
- Non-leaching
- Static resistant

Smart Sponge® is a combination of petroleum derived co-polymers that readily removes and encapsulat dilute quantities of various pollutants from aqueous streams while repelling water. All **AbTech** products i technology.

The resulting solidified oil and polymer mixture remains buoyant and, due to its molecular structure, pre· out, thus permitting Smart Sponge® to remain in place until fully saturated.

What is Smart Sponge® technology?

Smart Sponge® is AbTech Industries' multi patented hydrocarbon recovery system based on innovat technologies. This technology consists of a proprietary blend of polymers called the Smart Sponge®.

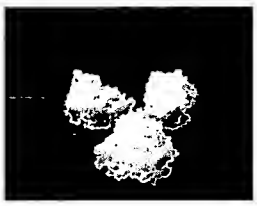
chemically selective to hydrocarbons and readily encapsulates oil and bonds it within the structure. TI transforms liquid petroleum hydrocarbons into a manageable solid waste that is fully recyclable. The : water and remains completely buoyant for easy retrieval even when fully saturated.

How is Smart Sponge® formulated and pack

The Smart Sponge® is produced by a proprietary manufacturing process into several different forms performance.

What is Smart Sponge® Popcorn for Filtratic

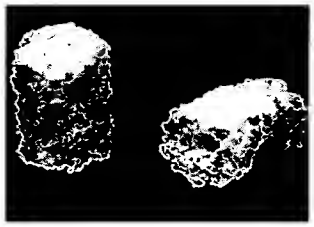
Smart Sponge® Popcorn is a non-leaching filtration media that resembles a piece of popcorn. Smart designed for the filtration of aqueous solutions contaminated by hydrocarbon pollutant levels of 1000 Sponge® Popcorn will function under a wide range of flow rates and pressures. Laboratory and field t be a superior media for stormwater filtration, with an average hydrocarbon removal of better than 8C



Smart Sponge® Popcorn

What are Smart Sponge® Propellets for Surf Skimming?

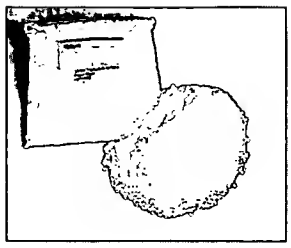
Smart Sponge® Propellets are non-leaching absorbent units, cylindrical in shape and approximately ; The Propellets have a rough exterior and a very high internal surface area. Smart Sponge® Propellet mesh containers and are designed to remove floating hydrocarbons, including sheen, from aqueous s Smart Sponge® Propellets float on the surface where the pollutant is most concentrated. The Smart process works equally well in calm or agitated environments.



Smart Sponge® Propellets

What is Smart Sponge® Particulate for land-spills?

Smart Sponge® Particulate is a non-leaching absorbent that is a lightweight powder-like material use stabilize a wide variety of hydrocarbon spills on land. Smart Sponge® Particulate is placed upon the (spill to stabilize hydrocarbons. After several minutes, the absorbed Smart Sponge® Particulate can b or recycling. Smart Sponge® Particulate is not recommended for use on water.



Smart Sponge® Particulate

How has Smart Sponge® been developed an

Since 1993, Smart Sponge® has undergone an extensive research, development, and test program t Sponge formulation and assure the integrity of the product. Extensive laboratory testing has been co company's facilities in Tucson, Arizona, at contract facilities in Albuquerque, New Mexico, and at inde laboratories and universities. In addition to field tests on oil spills, field testing of Smart Sponge® pr stormwater treatment is ongoing in California, Massachusetts, and Texas as well as other locations ar

What results have been achieved?

1. In a series of tests on Smart Sponge® using ASTM method F716-82(1993)e1, absorbency ratios r 14.5:1 were achieved (weight of absorbed oil to weight of absorbent), depending on the viscosity of t of exposure.

2. Tests were completed for King County, Washington, to demonstrate Smart Sponge® effectiveness once absorbed. Fully absorbed Smart Sponge® were flushed with water for ten minutes, producing le 2.2 mg/L (average 1.7 mg/L), well below the Washington State allowable value of 10 mg/L.

3. Tests have demonstrated the effectiveness of the Smart Sponge® in absorbing low-level dissolved Sponge® recovered up to 97% of an 8 ppm benzene solution in a simple gravity feed lab apparatus.

4. Smart Sponge® saturated with used motor oil and diesel fuel, have successfully passed the EPA M (Toxicity Characteristic Leaching Procedure) Test for volatile and semi-volatile organics, indicating no leachable analytes were present.

5. Smart Sponge® saturated with used motor oil and diesel fuel, have successfully passed the EPA M Liquids (Paint Filter Analysis), indicating no free liquids were present.

6. Smart Sponge® saturated with used motor oil and diesel fuel, have successfully passed the EPA M Flashpoint. Saturated Smart Sponge® samples tested at greater than 100°C.

7. Tests indicate neither high nor low pH affects the integrity of the Smart Sponge® , or its absorbin

8. Tests have shown that Smart Sponge® Passive Skimmers are static resistant and do not generate humidity and 0°F environmental chamber. The surface charge is 1.82 x 10-9 A SEC/m2, which is 50% polypropylene sorbents.

9. Tests undertaken on the Smart Sponge® Ultra-Urban Filter have shown the product to significantl hydrocarbon pollution in stormwater. Tests run in storm drain simulators confirm that the Ultra-Urbar 83% of the hydrocarbons present in a 28 ppm hydrocarbon stormwater solution.

What advantage does Smart Sponge® offer s rbents currently n the market?

Smart Sponge® offers a number of obvious advantages over polypropylene adsorbents - primarily its encapsulate recovered oil, resulting in a substantially more effective response. Because Smart Spong absorbed hydrocarbons and will not leak or leach, it can remain in place until fully saturated resulting and less expensive disposal options. This cost-effectiveness makes Smart Sponge® one of the most market.

What makes Smart Sponge® a stormwater E

(Best Management Practice)
Hydrocarbons from nonpoint sources are deposited on streets, highways, parking lots, and industrial into storm drains when it rains. Annual stormwater runoff from one square mile of roads and parking much as 5,000 gallons of oil and grease. This number does not include deliberate dumping and accid Smart Sponge® products strategically deployed in catch basins, oil/water separators, and sumps inte it in a non leaching fashion, from the stormwater flow and prevent its discharge into receiving waters

What Advantages does the Ultra-Urban Filte Smart Sponge® offer as a BMP or TMDL miti device?

The Ultra-Urban Filter has the potential to address several targeted non-point source pollutants. Its is effective in filtering out hydrocarbons. Just as critical, its design makes it an effective catch basin sediment, and debris. Often attached to this solid waste are metals, pathogens, and other contamina

Can Smart Sponge® be recycled?

Smart Sponge® can be immediately recycled by Ogden Waste Treatment Services (OWTS) in their w facilities, by beneficially reusing the spent Smart Sponge® as an alternative fuel in the production of OWTS will guarantee environmentally safe and efficient destruction of the spent product and provide to the customer which will; in effect, reduce any downstream liabilities associated with land filling an for product use.

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